

REMARKS

Claims 1, 5, and 9 are amended, new claims 11-22 are added, and claim 4 is canceled, without prejudice or disclaimer. Claims 1-3, 5, and 7-22 are pending.

New claims 11-22 are added which are based on the international application as originally filed. In particular, the method claims 18-22 are based on page 2 of the international application as originally filed, for example, the description in paragraphs [0014] to [0021] of the published version of the present application; that is, U.S. application publication number US 2006/0054347 A1. Accordingly, no new matter has been added.

In the office action, claims 1-5 and 7-10 were rejected under 35 U.S.C. § 103(a) in view of Japanese Patent Number JP 2000-156450 and U.S. Patent Number 2,744,063 to Shockley.

Claim 4 has been canceled.

Independent claim 1 is amended to recite that the outer surface of the conducting metal is covered in a layer of alloy containing tin, antimony and copper through dipping in a bath of molten alloy consisting of tin, antimony and copper.

Independent claim 1, as amended, is patentable over the cited art, since neither JP2000-156450 nor Shockley discloses or suggests all of the elements, steps, and features of the present invention, including the covering formed through dipping in a bath of molten alloy consisting of tin, antimony and copper.

Document JP2000-156450 discloses a "lead for electronic components" having a conducting metal able to continually conduct a current, the outer surface of which is covered, through an electrolytic process, in a layer of a two-component alloy, Sn-Bi, Sn-Sb or Sn-In, further covered in a layer, again through an electrolytic process, of silver (Ag). The purpose of

the apparatus as described in document JP2000-156450 is for a wire to be used for electronic components which can be produced with a non-pollutant process, and is solderable and not affected by the usual problems of metal whiskers and discoloration that affect the Sn-Pb alloy plated wires normally employed in the state of the art.

Shockley discloses a method for “electrodeposition of tin - antimony - copper alloys”. Shockley starts from a known alloy containing Sn, Sb and Cu and discloses an electrodeposition method and extended-period aqueous bath to plate bearing surfaces and babbitt metal. Please note that “babbitt metal”, also called “white metal”, is a well known alloy used to provide the bearing surface in a plain bearing, containing Sn-Cu, Sn-Sb-Cu or Sn-Sb-Pb. Shockley merely discloses an electrodeposition method and extended-period aqueous bath to be used for plating metals with a known alloy of Sn-Sb-Cu, not a dipping bath into molten alloy as in the present invention.

On the contrary, the present invention discloses a wire made of, for example, a copper core and an outer layer made of an alloy of Sn-Sb-Cu, in which the Sn-Sb-Cu coating is made through dipping in a bath of molten alloy of Sn-Sb-Cu. One having ordinary skill in the art would recognize that, by using such a dipping in a molten alloy bath, the present invention is capable of obtaining an improved crystalline structure of the coating and covering layer which is apt to reach the surprising effect of improving the audio and video electrical signals conduction in terms of higher quality and lower distortion. In addition, by using such a dipping in a molten alloy bath, the present invention is capable of obtaining a much greater thickness of the coating, such as at least 100 micrometers.

Both the cited prior art documents JP2000-156450 and Shockley disclose methods for electrodeposition of an alloy on a metal. JP-2000-156450 does not mention dipping in a bath of molten alloy, and so JP-2000-156450 cannot be properly combined with Shockley to produce the present invention, and JP-2000-156450 cannot remedy the deficiencies of Shockley to provide a dipping bath of molten alloy, as in the present invention.

One having ordinary skill in the art would not look to JP2000-156450 and Shockley for the present invention, since the outcome of such electrodeposition methods JP2000-156450 and Shockley is an outer layer covering the conducting metal, such that one having ordinary skill in the art would expect the covering layer to be much thinner, due to electrodeposition, than the covering layer according to the present invention provided by dipping the conducting metal into a molten alloy bath. Moreover, the outcome of such electrodeposition methods JP2000-156450 and Shockley is a layer which one having ordinary skill in the art would expect to have a completely different crystalline structure than the covering layer of the present invention, with the layer formed by the electrodeposition methods in JP2000-156450 and Shockley being totally unsuitable to achieve the results that the wire according to the present invention, which achieves an improvement of the quality of audio and video signal transmission.

Therefore, claim 1, as amended, is patentable over JP2000-156450 and Shockley.

Claims 2-3, 5, and 7-10 depend from amended claim 1, and so include the recitation of amended claim 1. For the reasons set forth above, claims 2-3, 5, and 7-10 are also patentable over JP2000-156450 and Shockley.

For the reasons set forth above for claim 1, new claims 11-17 are also patentable over JP2000-156450 and Shockley. In addition, new claims 18-22 are patentable over the JP2000-156450 and Shockley, since neither JP2000-156450 nor Shockley disclose or suggest every step and feature of the method claims 18-22.

Accordingly, claims 1-3, 5, and 7-10 are patentable over the cited art, so reconsideration and withdrawal of the rejection of claims 1-3, 5, and 7-10, and entry and favorable consideration of new claims 11-22 are respectfully requested.

Entry and approval of the present amendment and allowance of all pending claims are respectfully requested.

In case of any deficiencies in fees by the filing of the present amendment, the Commissioner is hereby authorized to charge such deficiencies in fees to Deposit Account Number 01-0035.

Respectfully submitted,



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